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PREVALENCE OF CHLAMYDIAL AND GONORRHEAL INFECTIONS AMONG FEMALES IN A JUVENILE DETENTION FACILITY, HONOLULU, HAWAII

Alan R. Katz, MD, MPH; Maria Veneranda C. Lee, MS; Roy G. Ohye, MS; Paul V. Effler, MD, MPH; Elmer C. Johnson, MD; Steven M. Nishi, MD

ABSTRACT: Limited studies have shown high rates of gonorrheal and chlamydial infections among incarcerated adolescents, however, this population has not been routinely targeted for sexually transmitted disease (STD) screening. This study was done to ascertain the feasibility of screening females for STDs at a juvenile detention facility in Honolulu, Hawaii, and to determine the prevalence of chlamydial and gonorrheal infections in this population. Between January 2000 and December 2001, pelvic examination-based STD screening was offered to all female detainees, on selected dates. Specimens from multiple anatomical sites were cultured for *Neisseria gonorrhoeae*. Endocervical swabs were tested for *Chlamydia trachomatis* using a DNA probe (GenProbe®). One-hundred one of 204 (50%) eligible females were screened. Fourteen of 101 (13.9%) females were screen positive for chlamydial infection, while six of 101 (5.9%) were culture positive for infection with *N. gonorrhoeae*. Three females were co-infected with both organisms. The high STD rates justify the institution of a routine screening program for this high risk and previously underserved group.

KEY WORDS: chlamydia; gonorrhea; adolescents; women's health.

Alan R. Katz, MD, MPH, is Associate Professor, Department of Public Health Sciences and Epidemiology, John A. Burns School of Medicine, University of Hawaii; Maria Veneranda C. Lee, MS, is Supervisor, Disease Intervention Specialists, STD/AIDS Prevention Branch, Communicable Disease Division, Hawaii State Department of Health; Roy G. Ohye, MS, is STD Program Coordinator, STD/AIDS Prevention Branch, Communicable Disease Division, Hawaii State Department of Health; Paul V. Effler, MD, MPH, is Chief, Communicable Disease Division, Hawaii State Department of Health; Elmer C. Johnson, MD, and Steven M. Nishi, MD, are Staff Physicians, Diamond Head Health Center, STD/AIDS Prevention Branch, Communicable Disease Division, Hawaii State Department of Health.

Requests for reprints should be addressed to Alan R. Katz, MD, Department of Public Health Sciences and Epidemiology, John A. Burns School of Medicine, University of Hawaii, Biomedical Sciences Building, Room D104M, 1960 East-West Road, Honolulu, HI 96822; e-mail: katz@hawaii.edu.

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INTRODUCTION

Among females in the United States, reported age-specific rates of both chlamydial and gonorrheal infections are highest among 15–19 year olds.[1] Incarcerated adolescents have demonstrated even higher rates of sexually transmitted diseases (STDs) when compared to unincarcerated peers.[2–4] Most chlamydial infections and many gonorrheal infections are asymptomatic in females and could remain undetected unless this population is examined and screened. STD screening is not routinely practiced in jails and juvenile detention facilities. Current practice involves testing clients based either on the presence of symptoms or client's request for services.[2] Many adolescents avoid STD screening and resist acknowledgment of risk behaviors for STDs.[5] Logistic barriers add to the challenges of identifying and treating juvenile detainees due to the limited health care resources and transient duration of incarceration.

The purpose of this study was to ascertain both the feasibility of screening females for STDs at a juvenile detention facility, and to determine the prevalence of chlamydial and gonorrheal infections in this population.

The target population for this study was female juvenile detainees at the State of Hawaii's main juvenile detention center. During 2000–2001 there were 729 total admissions to this facility (239 females; 490 males). Four hundred eighty-one juveniles (66%) were admitted once; 129 (18%) were admitted twice; 119 (16%) were admitted three or more times. The mean length of stay per admission was 10.2 days. The ages of female detainees ranged from 12–17 years, with a mean age of 15.3 years and a modal age of 16 years.

METHODS

A temporary STD screening, diagnostic, and treatment clinic was set up on-site at the state's main juvenile detention facility. Hawaii State STD Prevention Program personnel worked closely with the registered nurse assigned to the facility to reach the detainees with information regarding the importance of STD screening and prevention. The nurse also alerted the detainees to the availability of on-site STD screening. Free and confidential screening for gonorrheal and chlamydial infections was offered to all female detainees, on selected dates, between January 2000 and December 2001. Consenting females underwent a pelvic examination. Specimens from the rectum, urethra, endocervix, and oropharynx were

obtained using a cotton swab, and were plated onto Martin Lewis media for *N. gonorrhoeae* isolation. *C. trachomatis* screening was performed using a DNA probe (GenProbe®) on a swab from the endocervix. Females infected with *N. gonorrhoeae* were treated with cefixime and azithromycin; females with positive chlamydial screens were treated with azithromycin.[6] All cases were interviewed and encouraged to refer their sexual partners for treatment.

RESULTS

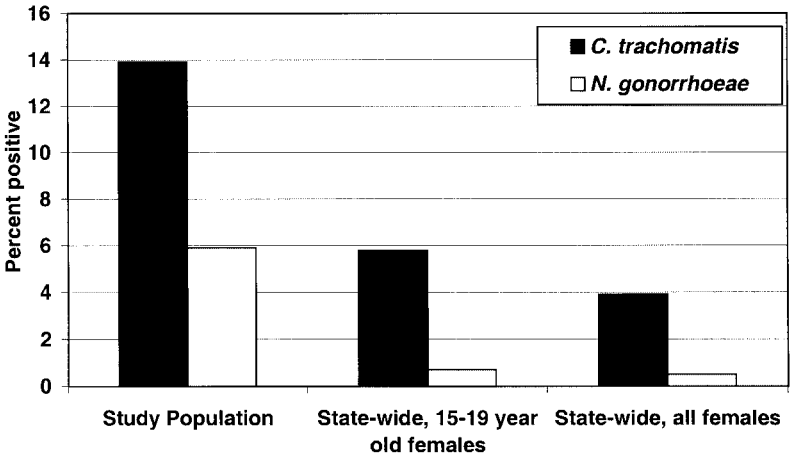
One hundred one of 204 female juvenile detainees, present at the detention center on the selected screening dates, consented to be screened for chlamydial and gonorrheal infections. Fourteen of 101 females were screen positive for chlamydial infection (13.9%), while six of 101 were culture positive for infection with *N. gonorrhoeae* (5.9%): two with rectal positive sites; three with urethral and endocervical positive sites; and one with an endocervical positive site. Three females were co-infected with *N. gonorrhoeae* and *C. trachomatis*. An isolate from one of the six females infected with *N. gonorrhoeae* demonstrated ciprofloxacin resistance (minimum inhibitory concentration of ≥1.0 μg/mL by agar dilution or a disk diffusion zone size of 28–35 mm). For 2000–2001, the overall chlamydial infection positivity rate for the State of Hawaii based on screening programs was 3.9% for females of all ages, and 5.8% among 15–19 year old females. The overall *N. gonorrhoeae* culture positivity rate for the State of Hawaii based on screening programs was 0.5% for females of all ages, and 0.7% for females 15–19 years old (Figure 1).

DISCUSSION

This project was a successful collaborative effort between the Hawaii State Department of Health, the Hawaii State Judiciary, and the University of Hawaii. Although this was a pilot project with a limited number of subjects, we were able to access approximately half of the females at the facility on the designated screening days. Our findings are remarkably similar to results recently obtained from screening female juveniles entering correction facilities in California, Texas, and Maryland where the median positivity for chlamydial infection was 15.6% (range: 8–19%) and the median positivity for gonorrheal infection was 5.2% (range: 3.4–10.0%).[7] As the sensitivity of the DNA probe (GenProbe®) is lower than

FIGURE 1

C. trachomatis and *N. gonorrhoeae* positivity rates, state of Hawaii, 2000–2001.



that of nucleic acid amplification tests,[8] the true prevalence of chlamydial infections among female juvenile detainees in Hawaii may exceed 13.9%. The high rates of chlamydial and gonorrheal infections justify the institution of a routine STD screening program for this high risk and previously underserved group. The utilization of noninvasive urine-based screening would be expected to enhance participation rates and allow for screening of clients who otherwise might not submit to a "traditional" complete genital STD examination.[9] Funding and resources must be dedicated to support routine STD screening and treatment within both the male and female juvenile detention center population. As median stays are relatively short, it is recommended that all sexually active clients have baseline STD screens upon admission into the facility.[10]

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